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AUTHOR Amarel, Marianne; Chittenden, Edward A.
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ABSTRACT

While the initial phases of instructional program development are heavily dependent on knowledge sources outside the classroom, knowledge developed in the classroom by the individual teacher is usually vital to program implementation. Interviews with teachers, principals, and district administrators connected with four urban elementary schools where new programs of reading instruction were being implemented revealed that the organizational characteristics of the schools were closely related to the kinds of knowledge sources used in both program development and program implementation. In contrast to programs in schools where decisions were made at the building level, district-mandated programs tended to be more procedural and practical in orientation than ideological or theoretical; this apparently influenced both teachers and principals to place little emphasis on knowledge of their students' needs and characteristics when implementing the programs. The authors suggest that if information about students is an indispensable ingredient of productive teaching, the growing trend toward selection and control of programs at a great administrative distance from the classroom may be counterproductive. (Author/PGD)

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A CONCEPTUAL STUDY OF KNOWLEDGE USE IN SCHOOLS

Marianne Amarel and Edward A. Chittenden

Educational Testing Service
Princeton, N.J.

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Studies of knowledge-use have been considerably handicapped by the absence of a rigorous, or even a generally agreed upon definition of knowledge-use. We can only agree with Dunn and Holzer (1981) that "at present, we lack an adequate understanding of what is meant by the term use." Having said this, we will proceed to focus on the topic of knowledge-use; in order to anchor, however provisionally, the discussion that follows we will borrow John Meyer's (1981) definition of educational knowledge. In his view, it consists of "assertions about the educational world having a cognitive character and some base in legitimation outside the educational organizational structure itself." This definition leaves the boundaries for knowledge claims wide and loose, well in keeping with the range of knowledge claims heaped upon the educational system in recent times. Knowledge use, in Meyer's terms thus becomes "the employment in the educational system of externally validated knowledge claims." An example of a knowledge claim may be the assertion that the ability to analyze spoken words into their component sounds is necessary for reading; the use of this claim would be manifested in introducing curricular materials to classrooms that are designed to teach the analysis of sound patterns.

Meyer's formulation, however, raises, even begs the question of the meaning of external validation, and more problematic still for our purpose, it conceptualizes educational knowledge exclusively as exogenous to the classroom and to the instructional process itself. We will comment on this issue at some length further on.

Our intention here is to present, first, a beginning and general conceptualization of knowledge sources that may be used in educational decisions; to go on to report on a study designed to bring empirical data to bear on this conceptualization in an attempt to relate patterns of knowledge use to the prevailing organizational structures of school systems. In the interstices, we will also offer a particular view of learning and teaching in the classroom, suggesting patterns of knowledge use consonant with it.

Knowledge sources for program development and implementation.

A useful distinction may be made between knowledge sources of educational programs that constitute the initial bases for program development, and working sources of knowledge that are necessary for program implementation. If pictured along two parallel planes, these knowledge sources may be further divided into sources that are external to the classroom, and those that are internal to the classroom. This conception of educational programs is presented below in Figure 1.[1]

[Insert Figure I about here]

Although intended more for illustrative than definitive purposes, Figure I schematizes a multitude of program possibilities. Starting with plane (a), it seems evident that most school programs are based on one or more initial sources of knowledge external to the classroom. For example, programs emphasizing criterion-referenced tests and instructional materials are usually based on an analysis of learning tasks into their component parts, with further analysis often producing logical sequence for the parts. The use of behavioral objectives may be traced to measurement models; several comprehensive programs (such as those represented in

		Intrinsic to the Classroom	External to the Classroom	
(a)	Initial Sources of Knowledge for <u>Program Development</u>	Teaching Experience	Subject-Matter and Analysis of Learning Tasks	Empirical Research - survey - naturalistic - experimental - test outcome paradigms Theories and Models - measurem't - psychology - sociology - economics etc.
(b)	Working Sources of Knowledge for <u>Program Implementation</u>	Children	Curriculum Materials Instructional Practices Assessment Procedures	Parents Specialists Other Teachers and Administrators

Figure I. A conception of educational programs in terms of knowledge sources

Follow Through) claim one or another model of learning or development as their basis.

Programs developed during the curriculum reform movement of the 1960s, received their primary impetus from a reconceptualization of knowledge in particular disciplines of the physical and social science (Heath, 1965). In some cases, empirical work has been the major source of program rationale, e.g., programs guided by studies of time-on-task (Wiley and Harnischfeger, 1974, Berliner et al., 1978), and the correlates of effective teaching (Anderson et al., 1978). In some cases, the practitioner's experience is considered critical for monitoring and revising programs as they are being implemented. Such programs (represented by many current inservice development efforts at Teacher Centers and elsewhere) tend to emphasize teachers' conscious reflection on and evaluation of their teaching experience (DeVaney & Thorn, 1975). Rarely, however, is knowledge intrinsic to the classroom regarded as a prime source for program development.

In contrast, program implementation necessarily depends on knowledge sources that are intrinsic to the classroom, particularly knowledge about students and their responses to curricular events and materials. While educational programs that are teacher proof, even student proof, are being promoted--programs that claim to incorporate all the knowledge necessary for successful implementation--there is little empirical evidence or theoretical support for the feasibility or the pedagogical soundness of such programs. Students come to the classroom with differences in what they know and understand, and they differ too in their motivation, abilities and learning styles. Traditionally, teachers have been responsible for negotiating the terrain between their students' qualities and the demands

of the learning tasks. The responsibility for this transaction cannot be assigned to anyone else, for information critical to carrying it out becomes available only during the course of instructional process, when students' responses to curricular materials and activities come to the fore.

This conception of the teaching role implies that in addition to possessing substantive knowledge and mastery of their craft, teachers must attend to characteristics of their students. Knowledge of and about students thus forms an essential working source of knowledge for program implementation. The requirement for this class of knowledge may be externally validated, to place it in the context of Meyer's definition, but its specific content defies such validation, as it derives, in good part, from instructional interactions.

Although our conceptualization does not explicitly include teachers' expectations and perceptions as a source of knowledge, it is assumed that all the potential sources of knowledge are sifted through teachers' values, attitudes and beliefs; an amalgam of the teachers' understandings becomes translated into some form of action. Thus Figure I may be likened to a map of possible information territories available to the teacher and administrator. In fact, differences in the way teachers and administrators are likely to read and use the map is of central interest, as it bears directly on the kind of knowledge that is required, and the way it is used, in fulfilling these two different educational functions.

The influence of organizational levels on knowledge-use.

With this preliminary framework in mind, we went on to try to identify patterns of knowledge-use in decision making at different levels of school organizations. We gathered data in four urban elementary schools from teachers, principals and district administrators. We limited our inquiry to decision making regarding reading programs, and selected the sites for their involvement in the implementation of new programs of reading instruction. Our choices were also guided by a search for differences in organizational arrangements and hierarchies of control in the four sites, expecting decision making patterns to be affected by these. The four schools, in fact, represented two examples of a centralized authority, where most decisions originated at the district level, and two exemplifying local autonomy, where a fair degree of decision making discretion was retained at the building level.

In focusing on the reading program in each school, we have, in effect, used it as the arena for discerning patterns of knowledge use; in this sense, it is the school, rather than the reading program that is the focus of our analysis.

In our interviews with school and district staff[2] we maintained a dual focus, one on knowledge used for program selection; the other on knowledge used as the point of departure for program implementation. What knowledge is invoked when decisions are made or justified, regarding core curricular materials, assessment systems, and goal statements? What knowledge is deemed essential by the staff in articulating their efforts, describing ongoing practices and concerns?

Clear differences emerged at the four sites, differences that were instructive in at least two ways: First, two distinct classes of knowledge used as the initial sources for program selection or definition could be discerned; second, a relationship between the locus of initial program decisions and the class of knowledge used for these decisions was suggested. Let us elaborate on each in turn: Concerning the knowledge used to undergird programs, two classes were distinguished: One type emphasized the procedural/practical aspects of instruction; knowledge as manifest in the routines and materials that characterize daily lessons. This is the what-to-do and how-to-do-it side of reading programs. Alternatively, the second class of knowledge gave priority to theoretical and value positions as guides to instruction, which were derived from research on how children learn, how reading is acquired and what functions reading ought to serve. While any viable school program would necessarily contain elements of both types of knowledge, for a given program, one or another may predominate, with the two sources standing in a figure-ground relationship to one another.

The four schools, in fact, could be arrayed along a continuum, where the poles are defined by the predominance of either (a) procedural/practical, or (b) ideological/theoretical knowledge as the initial sources for program development.

In School A, the program was defined almost exclusively in procedural/practical terms. The teachers' own accounts of the program are painted in procedural hues.

A first-grade teacher:

> We are bound to follow the reading program we've been given. We have to use the skills books and reading books. Add to this some supplemental books with the slower children . . it's taught with phonics, all phonics. In the beginning it's all initial sounds. We go in order - f b w g n.

In School D, the other end of the continuum, the point of departure for developing the reading program is cast in the form of educational principles, with recourse to theory and to assumptions about the nature of early reading. The definition of this reading program, as seen by principal and staff, is not to be found at the surface level of routines and materials but rather in a viewpoint about children's learning. A bulletin for parents begins:

> Reading is always an act of understanding, making sense. Therefore the more we know about the world and ourselves, the better readers we can be. The more familiar we are with ways to talk about and represent our knowledge of the world, the better readers we can be.

From the teachers point of view, the scope of decision making for transforming the program into specific classroom procedures and materials is obviously very broad in School D, and rather narrow in School A.

In these two schools the knowledge base for program implementation was presented to the teachers in essentially raw form; the procedural knowledge, in one case, was not well grounded in a set of guiding principles, and the theoretical knowledge, in the other case, was not tied to practical information about how it might become embodied in classroom routines.

The remaining two schools fell somewhat closer to the midpoint of the continuum, primarily as a function of the institutional support provided to teachers to elaborate, and to transform the raw knowledge into instructionally viable forms. In School B, a reading specialist assumed this crucial role of mediating between the uniform procedural mandates of the program and the particular circumstances facing individual teachers in carrying out their instructional responsibilities. The

mandates regarding the choice and sequence of basal readers, the grouping of children and the instructional schedules were softened somewhat as the teacher and coordinator assessed the needs of particular children. The coordinator thus legitimated the teacher's deviation from the letter of the mandates. In the course of such mediation, the rationale of the program and the principles underlying it were examined by the staff in a way that was not apt to occur in School A, where such a mechanism was not available.

In School C the reading program was based on an ideological/theoretical position. As in School D, teachers were expected to assume the responsibility for translating an orientation toward reading into the details of classroom practice. In this school, however, institutional steps had been taken to ensure that teachers had assistance with procedural/practical decision. A reading coordinator played this important part in the program. As a consequence, at the level of surface features of instruction there was greater uniformity of practice in this school than in School D.

Summary

The four sites, exemplifying a variety of organizational and control patterns regarding program decisions, reveal differences in knowledge use--differences that appear related both to the prevailing organizational arrangements and to the classes of knowledge that are needed and can be handled at the several levels of the hierarchy.

Teachers, closest to the actual instructional process, both need, and have best access to knowledge sources internal to the classroom. The degree to which they incorporate such knowledge into their instructional decisions is a function of the locus of program decisions: In schools A

and B, where the nature of the reading program was determined at the district level, the use of classroom based information was relatively low; it was better used in School B, where it was sanctioned by the reading specialist, who mediated the district program at the school level. In the two schools enjoying considerable autonomy, (schools C and D) program decision originated at the building level, and the teachers considered information about their students necessary to ongoing instructional decisions. This information, in the case of school C, was more predictably tied to particular instructional practices, as a reading coordinator served to reduce the variability of teaching approaches across classrooms.

Principals, at the next level of the hierarchy, were responsible to knowledge claims from external sources, but also had the opportunity to incorporate information from the classroom into their decision process. The principals with discretion over program decisions, (in schools C and D) assumed both administrative and instructional functions through their active participation in program decisions. These principals relied on knowledge from both internal and external sources, acquiring familiarity with individual classrooms and students; they were also responsive to the district's need for information that was pooled and aggregated across the school. The role of the principals in schools A and B, where the district arrogated the critical program decisions, was largely administrative, they rarely needed and used classroom based information. Thus the options that inhere in the principals' role regarding the balance of teaching and administrative functions were influenced by the organizational structure prevailing in their district.

These options, however, are not available to district administrators. The scope of their responsibilities dictates attention and dependence on external knowledge claims; responsiveness to these call for information in highly compacted form, so as to reflect school practices and performance across the district. Unlike principals, who may construe their role as partly instructional, the role of the district administrator excludes teaching functions and thus precludes the utility of individualized student or classroom information at this level of the hierarchy.

With these distinctions in mind, the particular class of knowledge that constitutes the initial source for programs in the two pairs of schools no longer appears fortuitous. A prescriptive program, built on a predominantly procedural knowledge base, characterized decision patterns made centrally, at some distance from the instructional process itself. A knowledge base of more general principles and values underlies the program in locally controlled schools. While it is conceivable that procedural knowledge could undergird programs formulated at the building level, it is more likely that a centrally controlled program would rest on such grounds. For a set of theoretical principles and ideological assumptions leave a great deal of discretion in the teacher's hands, resisting centrally controlled implementation. Local autonomy, on the other hand, permits the principal to monitor and otherwise guide the realization of broad principles. It is thus no coincidence, we believe, that in the more autonomous schools the principals were actively involved in overseeing the reading program. In these schools, they perforce acquired knowledge intrinsic to the classroom, either by direct observation, or from the teachers. In the centrally controlled schools where procedural knowledge guided teaching, the principals were a good deal more distant from the day

to-day process of implementation, confining their interest largely to evidence that the procedures, such as grouping and scheduling of students, use of mandated materials and activities, were implemented.

The conception of classroom instruction presented earlier claims that information about students that is revealed only during the course of instruction is an indispensible ingredient of productive teaching. The growing trend of selecting and controlling curricular programs at great administrative distance from the classroom minimizes the role of this source of knowledge, raising concerns about the effectiveness of this strategy in capitalizing and promoting teacher competence.

Footnotes

[1]The conception of knowledge sources was developed by Anne Bussis who collaborated on the formulation of the study.

[2]The interpretations are based on two major data sources: (a) semi-structured interviews with teachers, principals, reading coordinators and district administrators, and (b) documents related to reading programs. The interviews were conducted by the two principal investigators, based on a set of guidelines drawn-up for each of the roles studied. The documents included goal statements, behavioral objectives, curricular plans and materials, assessment procedures and evaluation reports. Limited classroom observations were also conducted.

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